

# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : MITSUI CHEMICALS INC

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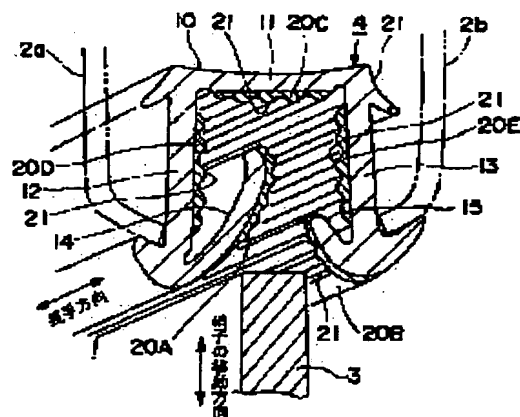
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## (54) GLASS GUIDE EDGE MEMBER

### (57)Abstract:

PROBLEM TO BE SOLVED: To lightly, smoothly, and stably elevate a window glass of a door of an automobile.

SOLUTION: In a first tongue member 14, a second tongue member 15, a top plate part 11, and side plate parts 12, 13 of a base member 10 of a glass guide edge member 4, contact strip members 20A, 20B, 20C, 20D, 20E are integrally provided at parts where a window glass 3 presses, and plural protrusions 21 continuous along the whole length in a length direction are formed on the contact strip members 20A-20E along the length direction of the glass guide edge member 4. The contact strip members 20A-20E are formed of a flexible synthetic resin having a smaller friction coefficient to glass than the base member 10, and the base member 10 and the contact strip members 20A-20E are simultaneously extruded to be integrated with each other.



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**CLAIMS**

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[Claim(s)]

[Claim 1] Extend for a long time in the direction which is countered and arranged on both sides of movable glass in between, and crosses to the migration direction of said movable glass, and even if few, it has the tongue-shaped piece of a couple. In the glass advice marginal material made of elasticity synthetic resin to which the point section of said tongue-shaped piece carries out pressure-welding sliding of the front face or rear face of said movable glass relatively by migration of said movable glass The part in which said movable glass in said each tongue-shaped piece carries out a pressure welding Glass advice marginal material which is made into the contact belt part formed with elasticity synthetic resin with friction smaller than other parts to glass, and is characterized by preparing two or more protruding lines which cover said movable glass side along with the longitudinal direction of the projection aforementioned tongue-shaped piece at a longitudinal direction overall length, and are continuously prolonged in this contact belt part.

[Claim 2] The part in which the tongue-shaped piece which makes said pair is connected by the connection section which makes a cross-section abbreviation KO typeface, and the movable glass in the inner surface of this connection section carries out a pressure welding Friction to glass is made into the contact belt part formed with small elasticity synthetic resin rather than other parts of the connection section. To this contact belt part Glass advice marginal material according to claim 1 characterized by preparing two or more protruding lines which cover said movable glass side along with the longitudinal direction of the projection aforementioned tongue-shaped piece at a longitudinal direction overall length, and are prolonged continuously.

[Claim 3] Said contact belt part and the other part are glass advice marginal material according to claim 1 or 2 characterized by extruding simultaneously, being cast and being unified.

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## DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates the closing motion of glass which carries out movable like the aperture glass of the door of an automobile to remission and the glass advice marginal material which can carry out actuation maintenance smoothly and stably.

[0002]

[Description of the Prior Art] Generally, the rise-and-fall closing motion of the aperture glass of the door in cars, such as an automobile, is attained, and rise-and-fall switching operation is frequently performed for ventilation etc. Therefore, glass advice marginal material is installed in the part for which to do the closing motion activity of glass lightly is needed therefore which glass frequents in a door panel, or the part which catches glass.

[0003] There is a thing to which made it make both sides of movable glass carry out the pressure welding of the point section of the tongue-shaped piece arranged on both sides of movable glass in this glass advice marginal material. Furthermore, to glass advice marginal material, in order to open and close movable glass still more lightly \*\* What [ attached what transplanted hair in fiber, such as nylon, into the part which the part which \*\*\*\* movable glass in said tongue-shaped piece, and the upper bed edge of movable glass contact ] \*\* what attached with adhesives the tape which put molybdenum into the synthetic-resin tape of a fluorine in the location which \*\*\*\* movable glass in said tongue-shaped piece, and \*\* — what painted the urethane which mixed silicone etc. in the location which \*\*\*\* movable glass in said tongue-shaped piece is known. Moreover, in case the part on which movable glass slides in the \*\* aforementioned tongue-shaped piece is formed by the elasticity resin which is excellent in sliding performance, it considers as sliding material and extrusion molding of the glass advice marginal material is carried out, said sliding material and carrying out extrusion molding simultaneously are also performed.

[0004]

[Problem(s) to be Solved by the Invention] There were the following problems in said each conventional glass advice marginal material. Although the contact condition and balking condition of glass advice marginal material and movable glass can be good and can operate the glass advice marginal material of the aforementioned \*\* smoothly as compared with glass advice marginal material without hair transplantation While the hair transplantation process of said various fiber is very complicated, a peculiarity is attached or worn out in the condition that hair transplantation fell by many activities of the switching operation of movable glass, and penetration of storm sewage, and there is a fault — early effectiveness is lost.

[0005] In order to attach a synthetic-resin tape in a tongue-shaped piece with adhesives in the case of the glass advice marginal material of the aforementioned \*\*, time and effort is taken and there is a serious fault that it is troublesome, and the installation to the complicated clamp face of the interior which the edge of movable glass inserts cannot equip any locations other than planes, such as bends, such as a tongue-shaped piece, and the corner section, with a tape while serving as a very troublesome activity.

[0006] In the case of the glass advice marginal material of the aforementioned \*\*, although the effectiveness lasts long, the process of paint is added and a process becomes complicated.

[0007] Since the processes, such as hair transplantation which in the case of the glass advice marginal material of the aforementioned \*\* is needed by the glass advice marginal material of the aforementioned \*\* — \*\* in order to carry out simultaneous extrusion molding of glass advice marginal material and the sliding material, tape wearing, and paint, are unnecessary, the production process becomes very simple. However, the glass advice marginal material of this \*\* has problems, like the sliding friction at the time of glass closing motion is large as compared with the glass advice marginal material of the aforementioned \*\* — \*\*. In order to solve this, the technique which mixes particles, such as a mica and molybdenum, and forms a split face in the zone-of-contact

front face to glass is indicated by JP,8-020057,A. the fault that control of this surface roughness is difficult by this approach — \*\*\*\* — it gets down, when a front face is ruined too much, a leak occurs, when a dry area is small, it is and the problem that the sliding friction at the time of glass closing motion is large occurs. Moreover, in the glass advice marginal material arranged so that sliding material can be [ from ] seen outside an automobile, the dry area of this front face has the problem of spoiling salability.

[0008] Moreover, although there are some which constituted the glass advice marginal material other than the glass advice marginal material mentioned above from foaming synthetic resin etc., there is a fault which is easily worn out or is damaged.

[0009] This invention is made in view of the trouble of such a Prior art, it can continue at a long period of time, switching operation of movable glass can be performed lightly and smoothly, and it aims at offering the glass advice marginal material excellent in airtightness and watertightness.

[0010]

[Means for Solving the Problem] The glass advice marginal material concerning this invention adopted the following means, in order to solve said technical problem. Namely, extend for a long time in the direction which this invention counters in between, is arranged on both sides of movable glass, and crosses to the migration direction of said movable glass, and even if few, it has the tongue-shaped piece of a couple. In the glass advice marginal material made of elasticity synthetic resin to which the point section of said tongue-shaped piece carries out pressure-welding sliding of the front face or rear face of said movable glass relatively by migration of said movable glass The part in which said movable glass in said each tongue-shaped piece carries out a pressure welding It considers as the contact belt part formed with elasticity synthetic resin with friction smaller than other parts to glass, and is characterized by preparing two or more protruding lines which cover said movable glass side along with the longitudinal direction of the projection aforementioned tongue-shaped piece at a longitudinal direction overall length, and are continuously prolonged in this contact belt part.

[0011] Since a touch area is very small since it becomes the crowning of the protruding line of a contact belt part, and frictional resistance is also small, carrying out a pressure welding to movable glass in the tongue-shaped piece of glass advice marginal material can perform migration (closing motion) of movable glass very lightly. Moreover, since the protruding line is continued and prepared in the longitudinal direction overall length along with the longitudinal direction of a tongue-shaped piece and the pressure welding of the crowning of a protruding line is carried out to the front face or rear face of movable glass by moderate strength, it excels in airtightness and watertightness and the ridge effectiveness is also high. Moreover, since a contact belt part is a fricative small product made of elasticity synthetic resin, the protruding line which slides on movable glass cannot be easily worn out, either.

[0012] Moreover, the part in which the tongue-shaped piece which makes said pair is connected in the glass advice marginal material of this invention by the connection section which makes a cross-section abbreviation KO typeface, and the movable glass in the inner surface of this connection section carries out a pressure welding It considers as the contact belt part formed with elasticity synthetic resin with friction smaller than other parts of the connection section to glass, and in this contact belt part, two or more protruding lines which cover said movable glass side along with the longitudinal direction of the projection aforementioned tongue-shaped piece at a longitudinal direction overall length, and are prolonged continuously are prepared, and can constitute in it.

[0013] Moreover, in the glass advice marginal material of this invention, it is possible to extrude said contact belt part and the other part simultaneously, to cast them, and to unify. If it does in this way, since it not only can simplify a production process, but can unify firmly, a contact belt part does not exfoliate or it does not drop out. Moreover, the configuration and magnitude of a protruding line can be set as a request with the mouthpiece at the time of extrusion molding.

[0014] Although the glass advice marginal material of this invention can apply the aperture glass of the door of cars, such as an automobile, as movable glass, movable glass is not limited to the aperture glass of such an automobile. Moreover, although the migration direction of movable glass may be the vertical direction, it is not limited to this, and it does not matter even if it is a longitudinal direction etc.

[0015]

[Embodiment of the Invention] Hereafter, the gestalt of operation of the glass advice marginal material concerning this invention is explained based on the drawing of drawing 4 from drawing 1 . In addition, the gestalt of operation shown below is the mode which installed the glass advice marginal material concerning this invention in the door of an automobile.

[0016] [Gestalt of the 1st operation] As shown in drawing 3 , aperture glass (movable glass) 3 is formed in the door 2 of an automobile 1 possible [ rise and fall ]. The glass advice marginal material 4 which catches the upper limb of aperture glass 3 is installed in the upper part of a door 2. Drawing 1 is the perspective view of the glass

advice marginal material 4 fractured along with the I-I line in drawing 3 , and fitting immobilization of the glass advice marginal material 4 is carried out at door-panel 2a which constitutes a door 2, and 2b.

[0017] When aperture glass 3 is raised and it is made a close by-pass bulb completely, the glass advice marginal material 4 is formed for a long time along the upper part of a door 2 so that all the upper limbs of aperture glass 3 can be caught. Therefore, it can be said that the glass advice marginal material 4 is prolonged for a long time in the migration direction (the vertical direction) of aperture glass 4, and the crossing direction (longitudinal direction).

[0018] This glass advice marginal material 4 consists of a base material 10 fixed to door-panel 2a and 2b, and five zone-of-contact material (contact belt part) 20A, 20B, 20C, 20D, and 20E fixed to this base material 10.

[0019] the product made of elasticity synthetic resin in which a base material 10 has elasticity -- it is -- for example, thermoplastic elastomer -- it is preferably formed by the thermoplastic elastomer of an olefin system. The side plate sections 12 and 13 to which a base material 10 extends in this dimension lower part mostly from the ends of the top plating section 11 and this top plating section 11, It has the 2nd tongue-shaped piece 15 curved and prolonged in the slanting upper part in the 1st tongue-shaped piece 14 curved and prolonged in the direction close to the side plate section 13 of another side from the margo inferior of one side plate section 12 in the slanting upper part, and the direction which approaches the side plate section 12 from the margo inferior of the side plate section 13 of another side. Therefore, the top plating section 11 and the side plate sections 12 and 13 can be called connection section which connects the 1st tongue-shaped piece 14 and the 2nd tongue-shaped piece 15. The 1st tongue-shaped piece 14 and the 2nd tongue-shaped piece 15 carry out phase opposite, are arranged, and are extending the 1st tongue-shaped piece 14 the top for a long time a little rather than the 2nd tongue-shaped piece 15.

[0020] If aperture glass 3 is inserted between the 1st tongue-shaped piece 14 and the 2nd tongue-shaped piece 15 and aperture glass 3 is changed into a close-by-pass-bulb-completely condition, the upper limb of aperture glass 3 will run against the top plating section 11.

[0021] Zone-of-contact material 20A is fixed to the field side which counters aperture glass 3 in the 1st tongue-shaped piece 14. Zone-of-contact material 20B is fixed to the field side which counters aperture glass 3 in the 2nd tongue-shaped piece 15, zone-of-contact material 20C is fixed to the inner surface of the top plating section 11, zone-of-contact material 20D is fixed to the inner surface of the side plate section 12, and zone-of-contact material 20E is being fixed to the inner surface of the side plate section 13. These zones-of-contact material 20A-20E is formed with elasticity synthetic resin with friction smaller than the elasticity synthetic resin of a base material 10 to glass, for example, the elasticity synthetic resin which added lubricant to thermoplastic elastomer.

[0022] the zone-of-contact material 20A-20E is continued and formed in the overall length of the longitudinal direction of the glass advice marginal material 4 in each part -- having -- \*\*\*\* -- each zone-of-contact material 20A-20E -- respectively -- two or more -- the protruding lines 21 and 21 of a book ... is formed. Nothing and a protruding line 21 are continuously formed in the approximate circle arc in which the cross-section configuration of each protruding line 21 projects toward the aperture glass 3 side, without continuing and breaking off for an overall length along with the longitudinal direction of the glass advice marginal material 4.

[0023] and when aperture glass 3 is raised and it is made a close by-pass bulb completely As shown in drawing 2 , two or more [ in the protruding line 21 of zone-of-contact material 20A ] (the example of drawing 2 3) carry out a pressure welding to surface 3a of aperture glass 3 by moderate strength. Among the protruding lines 21 of zone-of-contact material 20B, a book (the example of drawing 2 2) carries out a pressure welding to rear-face 3b of aperture glass 3 by moderate strength, and among the protruding lines 21 of zone-of-contact material 20C, two or more books [ two or more ] (the example of drawing 2 2) are set up so that a pressure welding may be carried out to upper limb 3c of aperture glass 3 by moderate strength. Moreover, also when aperture glass 3 is made into a close by-pass bulb completely and surface 3a or rear-face 3b of aperture glass 3 contacts the zone-of-contact material 20D and 20E, the protruding line 21 of the zone-of-contact material 20D and 20E carries out a pressure welding to surface 3a or rear-face 3b of aperture glass 3.

[0024] In addition, the glass advice marginal material 4 in the gestalt of this operation extrudes simultaneously a base material 10 and the zone-of-contact material 20A, 20B, 20C, 20D, and 20E, casts them, and is manufacturing them, and a base material 10 and each zone-of-contact material 20A-20E are unified firmly. Therefore, even if it carries out pressure-welding sliding of aperture glass 3 and the zone-of-contact material 20A-20E, the zone-of-contact material 20A-20E exfoliates, or does not drop out of a base material 10.

[0025] Thus, in the constituted glass advice marginal material 4, what pressure-welding sliding is carried out for on aperture glass 3 at the time of close-by-pass-bulb-completely actuation of aperture glass 3 is the crowning of the protruding line 21 of the zone-of-contact material 20A and 20B. A touch area with aperture glass 3 is dramatically small, and since friction to glass moreover forms the zone-of-contact material 20A and 20B by

small resin, the frictional resistance between aperture glass 3 and the zone-of-contact material 20A and 20B has these dramatically small conjointly. Therefore, the switching operation of aperture glass 3 becomes very smooth, and it can be operated to remission, smoothness, and stability.

[0026] Moreover, since the protruding line 21 is continued and formed in the longitudinal direction overall length along with the longitudinal direction of the glass advice marginal material 4 and the crowning of the protruding line 21 of the zone-of-contact material 20A and 20B is carrying out the pressure welding to surface 3a or rear-face 3b of aperture glass 3 by moderate strength, it excels in the airtightness between aperture glass 3, and watertightness, and the penetration prevention effectiveness and the ridge effectiveness, such as storm sewage, are also high. Since the protruding line 21 of zone-of-contact material 20C carries out a pressure welding also to upper limb 3c of aperture glass 3 with the gestalt of this operation especially at the time of the close by-pass bulb completely of aperture glass 3, airtightness and fluid-tight nature are very high.

[0027] Moreover, since friction of as opposed to glass in the zone-of-contact material 20A-20E is formed by small resin, even if aperture glass 3 carries out pressure-welding sliding, a protruding line 21 cannot be easily worn out, and can continue and maintain the expected engine performance of the glass advice marginal material 4 at a long period of time.

[0028] Moreover, even if the front face of the zone-of-contact material 20A and 20B has the smooth curve, and is glossy and its glass advice marginal material 4 can be seen from from outside an automobile 1, it is good-looking.

[0029] [Gestalt of the 2nd operation] Next, with reference to drawing 4, the gestalt of operation of the 2nd of the glass advice marginal material concerning this invention is explained. The glass advice marginal material 40 of the gestalt of the 2nd operation is the mode installed in the part into which aperture glass 3 projects in the door 2 of an automobile 1, and drawing 4 is the sectional view of the glass advice marginal material 40 fractured along with the II-II line in drawing 3.

[0030] This glass advice marginal material 40 consists of two components of the bezel material 41 arranged at the surface 3a side of aperture glass 3, and the back marginal material 42 arranged at the rear-face 3b side, and on both sides of aperture glass 3, the bezel material 41 and the back marginal material 42 counter in between, and are arranged, and it is fixed to the door panel which is not illustrated, respectively.

[0031] The zone-of-contact material (contact belt part) 50A and 50B is formed in the part which the tongue-shaped pieces 43 and 44 prolonged in the slanting upper part toward the aperture glass 3 side are formed up and down, and carries out the pressure welding of the bezel material 41 to aperture glass 3 in tongue-shaped pieces 43 and 44. The zone-of-contact material (contact belt part) 50C and 50D is formed in the part which the tongue-shaped pieces 45 and 46 prolonged in the slanting upper part toward the aperture glass 3 side are formed up and down, and carries out the pressure welding of the back marginal material 42 to aperture glass 3 in tongue-shaped pieces 45 and 46.

[0032] The zone-of-contact material 50A-50D is formed for the same raw material as the zone-of-contact material 20A-20E in the gestalt of said 1st operation, and has two or more protruding lines 51 like the zone-of-contact material 20A-20E.

[0033] While surface 3a of aperture glass 3 carries out the pressure welding of the case of the glass advice marginal material 40 of the gestalt of the 2nd operation to the crowning of the protruding line 51 of the zone-of-contact material 50A and 50B of the upper and lower sides of the bezel material 41 and rear-face 3b of aperture glass 3 carries out a pressure welding to the crowning of the protruding line 51 of the contact edges 50C and 50D of the upper and lower sides of the back marginal material 42, aperture glass 3 goes up and down. The glass advice marginal material 40 of the gestalt of this 2nd operation also does so the same operation and effectiveness as the glass advice marginal material 4 of the gestalt of the 1st operation.

[0034]

[Effect of the Invention] As explained above, even if few [ extend / for a long time / in the direction which is countered and arranged on both sides of movable glass in between, and crosses to the migration direction of said movable glass and ] according to the glass advice marginal material concerning this invention, it has the tongue-shaped piece of a couple. In the glass advice marginal material made of elasticity synthetic resin to which the point section of said tongue-shaped piece carries out pressure-welding sliding of the front face or rear face of said movable glass relatively by migration of said movable glass The part in which said movable glass in said each tongue-shaped piece carries out a pressure welding Friction to glass is made into the contact belt part formed with small elasticity synthetic resin rather than other parts. To this contact belt part By preparing two or more protruding lines which cover said movable glass side along with the longitudinal direction of the projection aforementioned tongue-shaped piece at a longitudinal direction overall length, and are prolonged continuously Frictional resistance between the movable glass when operating movable glass and glass advice marginal material can be made small, and the outstanding effectiveness that movable glass can be smoothly

operated to stability very lightly is done so. Moreover, even if it is using it over a long period of time, a contact belt part cannot be easily worn out, therefore it can continue and the expected engine performance of glass advice marginal material can be maintained at a long period of time. Furthermore, the airtightness between movable glass and glass advice marginal material and watertightness are high, and the penetration prevention effectiveness and the ridge effectiveness, such as storm sewage, also have them. [ high ]

[0035] Moreover, when said contact belt part and the other part are extruded simultaneously, are cast and it unifies, by pressure-welding sliding with a contact belt part and movable glass, a contact belt part exfoliates or does not drop out, either. Furthermore, there is also an advantage that a production process can be simplified.

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**DESCRIPTION OF DRAWINGS**

[Brief Description of the Drawings]

[Drawing 1] It is the perspective view fracturing and showing a part of glass advice marginal material in the gestalt of operation of the 1st of this invention.

[Drawing 2] It is the important section sectional view of said glass advice marginal material at the time of an aperture glass close by-pass bulb completely.

[Drawing 3] It is the perspective view of the automobile equipped with the glass advice marginal material concerning this invention.

[Drawing 4] It is the sectional view of the glass advice marginal material in the gestalt of operation of the 2nd of this invention.

[Description of Notations]

- 1 Automobile
- 2 Door
- 3 Aperture Glass (Movable Glass)
- 4 Glass Advice Marginal Material
- 10 Base Material
- 11 Top Plating Section (Connection Section)
- 12 Side Plate Section (Connection Section)
- 13 Side Plate Section (Connection Section)
- 14 1st Tongue-shaped Piece
- 15 2nd Tongue-shaped Piece
- 20A-20E Zone-of-contact material (contact belt part)
- 21 Protruding Line
- 40 Glass Advice Marginal Material
- 41 Bezel Material
- 42 Back Marginal Material
- 43-46 Tongue-shaped piece
- 50A-50D Zone-of-contact material (contact belt part)
- 51 Protruding Line

[Translation done.]



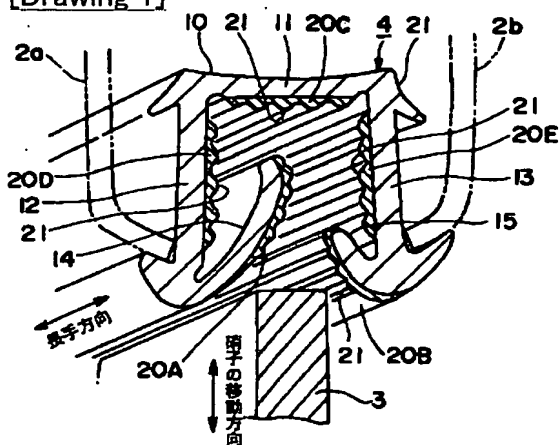
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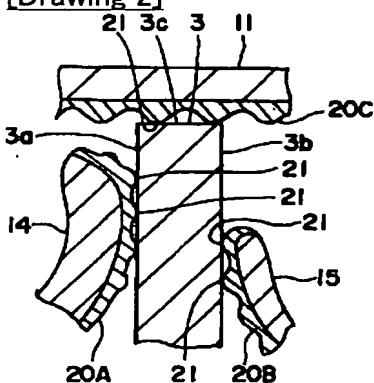
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DRAWINGS

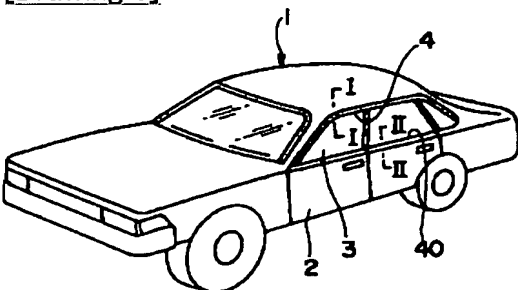
[Drawing 1]



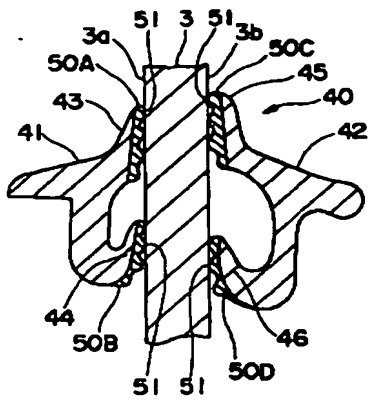
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Translation done.]

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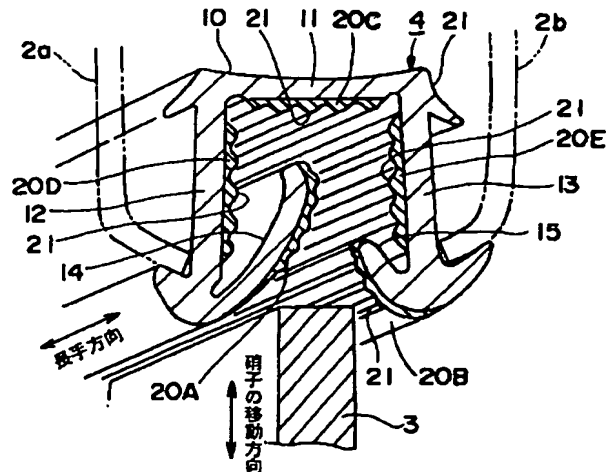
Fターム(参考) 3D127 AA11 AA15 AA19 CB05 DE03  
DE09 DE12 DE18 DE22 DE32

(54)【発明の名称】 硝子案内縁材

(57)【要約】

【課題】 自動車のドアの窓硝子を軽快、円滑、安定に昇降可能にする。

【解決手段】 硝子案内縁材4の基材10の第1舌片14、第2舌片15、頂板部11、側板部12、13において、窓硝子3が圧接する部位に、接触帯材20A、20B、20C、20D、20Eを一体的に設け、接触帯材20A~20Eには、硝子案内縁材4の長手方向に沿って長手方向全長に亘って連続した複数の突条21を形成する。接触帯材20A~20Eは、基材10よりも硝子に対する摩擦が小さい軟質合成樹脂で形成し、基材10と接触帯材20A~20Eは同時に押し出し成型して一体化する。



## 【特許請求の範囲】

【請求項1】 可動硝子を間に挟んで対向して配置され前記可動硝子の移動方向に対して交差する方向に長く延びる少なくとも一対の舌片を有し、前記可動硝子の移動により前記舌片の先部が前記可動硝子の表面あるいは裏面を相対的に圧接摺動する軟質合成樹脂製の硝子案内縁材において、

前記各舌片における前記可動硝子が圧接する部分は、他の部分よりも硝子に対する摩擦が小さい軟質合成樹脂で形成された接触帯部とされており、この接触帯部には、前記可動硝子側に突出し前記舌片の長手方向に沿い長手方向全長に亘って連続的に延びる突条が複数設けられていることを特徴とする硝子案内縁材。

【請求項2】 前記対をなす舌片は断面略コ字形をなす連結部によって連結されており、この連結部の内面における可動硝子が圧接する部分は、連結部の他の部分よりも硝子に対する摩擦が小さい軟質合成樹脂で形成された接触帯部とされており、この接触帯部には、前記可動硝子側に突出し前記舌片の長手方向に沿い長手方向全長に亘って連続的に延びる突条が複数設けられていることを特徴とする請求項1に記載の硝子案内縁材。

【請求項3】 前記接触帯部とそれ以外の部分は同時に押し出し成型されて一体化されたものであることを特徴とする請求項1または2に記載の硝子案内縁材。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、自動車のドアの窓硝子などのように可動する硝子の開閉を軽快、円滑および安定的に操作維持できる硝子案内縁材に関するものである。

## 【0002】

【従来の技術】一般に、自動車などの車両におけるドアの窓硝子は昇降開閉可能になっていて、換気などのために頻繁に昇降開閉操作が行われる。従って硝子の開閉作業が軽快に行われることが必要とされ、そのために、ドアパネルにおいて硝子が入出する部分や硝子を受け止める部分には硝子案内縁材が設置されている。

【0003】この硝子案内縁材には、可動硝子の両側に配置した舌片の先部を可動硝子の両面に圧接させるようにしたものがある。さらに、硝子案内縁材には、可動硝子をさらに軽快に開閉するために、①前記舌片において可動硝子を圧持する部分及び可動硝子の上端縁が当接する部分にナイロン等の繊維を植毛したものを取り付けたものや、②前記舌片において可動硝子を圧持する位置にフッ素の合成樹脂テープにモリブデンを入れたテープを接着剤で取り付けたものや、③前記舌片において可動硝子を圧持する位置にシリコンなどを混入したウレタンを塗装したものが知られている。また、④前記舌片において可動硝子が摺動する部分を摺動性能に優れた軟質樹脂で形成して摺動材とし、硝子案内縁材を押し出し成形

する際に前記摺動材も同時に押し出し成形することも行われている。

## 【0004】

【発明が解決しようとする課題】前記従来の各硝子案内縁材には次のような問題があった。前記①の硝子案内縁材は、植毛のない硝子案内縁材と比較すると、硝子案内縁材と可動硝子との接触状態及び離脱状態が良好で円滑に操作できるが、前記各種繊維の植毛工程が大変複雑であるとともに、可動硝子の開閉操作の多数回の使用および雨水の進入により植毛が倒れた状態に癖が付いたり、摩耗したりして初期の効果が失われる等の欠点がある。

【0005】前記②の硝子案内縁材の場合には、合成樹脂テープを舌片に接着剤で取り付けるため手間がかかって面倒であり、可動硝子の端縁が挿入する内部の複雑な取り付け面に対する取り付けは大変面倒な作業となるとともに、舌片等の湾曲部およびコーナー部等の平面状以外の場所にはテープが装着できないという重大な欠点がある。

【0006】前記③の硝子案内縁材の場合には、その効果は永続きするものの、塗装の工程が加わり工程が複雑になる。

【0007】前記④の硝子案内縁材の場合には、硝子案内縁材と摺動材を同時押し出し成形するため、前記①～③の硝子案内縁材で必要とされる植毛、テープ装着、塗装等の工程が不要なため、その製造工程は非常に簡便となる。しかしながら、この④の硝子案内縁材は、前記①～③の硝子案内縁材と比較すると、硝子開閉時の摺動抵抗が大きい等の問題がある。これを解決するために、特開平8-020057号公報等には、雲母、モリブデン等の粒子を混合し硝子に対する接触帯表面に粗面を形成する技術が開示されている。この方法では、この表面粗度の制御が困難であるという欠点をもっており、表面が荒れすぎた場合には水漏れが発生し、荒れが小さい場合には硝子開閉時の摺動抵抗が大きいという問題が発生する。また摺動材が自動車の外から見えるように配置された硝子案内縁材では、この表面の荒れは商品性を損ねるという問題がある。

【0008】また、前述した硝子案内縁材のほかに、硝子案内縁材を発泡合成樹脂等で構成したものもあるが、容易に摩耗したり、破損したりする欠点がある。

【0009】本発明はこのような従来の技術の問題点を鑑みてなされたものであり、可動硝子の開閉操作を長期に亘って軽快かつ円滑に行うことができ、気密性、水密性に優れた硝子案内縁材を提供することを目的とする。

## 【0010】

【課題を解決するための手段】本発明に係る硝子案内縁材は前記課題を解決するために、以下の手段を採用した。即ち、本発明は、可動硝子を間に挟んで対向して配置され前記可動硝子の移動方向に対して交差する方向に長く延びる少なくとも一対の舌片を有し、前記可動硝子

の移動により前記舌片の先部が前記可動硝子の表面あるいは裏面を相対的に圧接摺動する軟質合成樹脂製の硝子案内縁材において、前記各舌片における前記可動硝子が圧接する部分は、他の部分よりも硝子に対する摩擦が小さい軟質合成樹脂で形成された接触帯部とされており、この接触帯部には、前記可動硝子側に突出し前記舌片の長手方向に沿い長手方向全長に亘って連続的に延びる突条が複数設けられていることを特徴とする。

【0011】硝子案内縁材の舌片において可動硝子に圧接するのは、接触帯部の突条の頂部になるので、接触面積が極めて小さく、また摩擦抵抗も小さいので、可動硝子の移動（開閉）が極めて軽快にできる。また、突条は舌片の長手方向に沿い長手方向全長に亘って設けられており、突条の頂部は適度の強さで可動硝子の表面あるいは裏面に圧接するので、気密性及び水密性に優れ、水切り効果も高い。また、接触帯部は摩擦の小さい軟質合成樹脂製であるので、可動硝子を摺動する突条も摩耗しにくい。

【0012】また、本発明の硝子案内縁材においては、前記対をなす舌片が断面略コ字形をなす連結部によって連結されており、この連結部の内面における可動硝子が圧接する部分は、連結部の他の部分よりも硝子に対する摩擦が小さい軟質合成樹脂で形成された接触帯部とされており、この接触帯部には、前記可動硝子側に突出し前記舌片の長手方向に沿い長手方向全長に亘って連続的に延びる突条が複数設けられて構成することができる。

【0013】また、本発明の硝子案内縁材においては、前記接触帯部とそれ以外の部分を同時に押し出し成型して一体化することが可能である。このようにすると、製造工程を簡略化できるだけでなく、強固に一体化することができるので、接触帯部が剥離したり脱落することがない。また、突条の形状や大きさは押出成形時の口金で所望に設定することができる。

【0014】本発明の硝子案内縁材は、自動車等車両のドアの窓硝子を可動硝子として適用することが可能であるが、可動硝子はこのような自動車の窓硝子に限定されるものではない。また、可動硝子の移動方向は上下方向であってもよいが、これに限定されるものではなく、左右方向等であっても構わない。

【0015】

【発明の実施の形態】以下、本発明に係る硝子案内縁材の実施の形態を図1から図4の図面に基いて説明する。尚、以下に示す実施の形態は、本発明に係る硝子案内縁材を自動車のドアに設置した態様である。

【0016】〔第1の実施の形態〕図3に示すように、自動車1のドア2には窓硝子（可動硝子）3が昇降可能に設けられている。ドア2の上部には、窓硝子3の上縁を受け止める硝子案内縁材4が設置されている。図1は、図3において1-1線に沿って破断した硝子案内縁材4の斜視図であり、硝子案内縁材4はドア2を構成す

るドアパネル2a、2bに嵌合固定されている。

【0017】硝子案内縁材4は、窓硝子3を上昇させて全閉にした時に窓硝子3の上縁の全てを受け止めることができるように、ドア2の上部に沿って長く設けられている。したがって、硝子案内縁材4は窓硝子4の移動方向（上下方向）と交差する方向（左右方向）に長く延びているといえることができる。

【0018】この硝子案内縁材4は、ドアパネル2a、2bに固定される基材10と、この基材10に固定された5つの接触帯材（接触帯部）20A、20B、20C、20D、20Eとから構成されている。

【0019】基材10は弾性を有する軟質合成樹脂製であり、例えば、熱可塑性エラストマー、好ましくはオレフィン系の熱可塑性エラストマーで形成されている。基材10は、頂板部11と、この頂板部11の両端からほぼ同寸法下方に延びる側板部12、13と、一方の側板部12の下縁から他方の側板部13に接近する方向に斜め上方に湾曲して延びる第1舌片14と、他方の側板部13の下縁から側板部12に接近する方向に斜め上方に湾曲して延びる第2舌片15とを備えている。したがって、頂板部11と側板部12、13は、第1舌片14と第2舌片15とを連結する連結部といえることができる。第1舌片14と第2舌片15は相対向して配置されており、第1舌片14は第2舌片15よりも若干長く上延している。

【0020】窓硝子3は第1舌片14と第2舌片15の間に挿入されるようになっており、窓硝子3を全閉状態にすると窓硝子3の上縁が頂板部11に突き当たるようになっている。

【0021】第1舌片14において窓硝子3に対向する面側には接触帯材20Aが固定され、第2舌片15において窓硝子3に対向する面側には接触帯材20Bが固定され、頂板部11の内面には接触帯材20Cが固定され、側板部12の内面には接触帯材20Dが固定され、側板部13の内面には接触帯材20Eが固定されている。これら接触帯材20A～20Eは基材10の軟質合成樹脂よりも硝子に対する摩擦の小さい軟質合成樹脂、例えば、熱可塑性エラストマーに滑剤を添加した軟質合成樹脂で形成されている。

【0022】接触帯材20A～20Eは、それぞれの部位において硝子案内縁材4の長手方向の全長に亘って設けられており、各接触帯材20A～20Eには、それぞれ複数本の突条21、21・・・が形成されている。各突条21の断面形状は窓硝子3側に向かって突出する略円弧状をなし、突条21は硝子案内縁材4の長手方向に沿い全長に亘って途切れることなく連続して形成されている。

【0023】そして、窓硝子3を上昇させ全閉にしたときには、図2に示すように、接触帯材20Aの突条21のうちの複数本（図2の例では3本）が窓硝子3の表面

3 aに適度の強さで圧接し、接触帯材20 Bの突条2 1のうち複数本(図2の例では2本)が窓硝子3の裏面3 bに適度の強さで圧接し、接触帯材20 Cの突条2 1のうち複数本(図2の例では2本)が窓硝子3の上縁3 cに適度の強さで圧接するように設定されている。また、窓硝子3を全閉にしたときに、窓硝子3の表面3 aあるいは裏面3 bが接触帯材20 D、20 Eに接触した場合にも、接触帯材20 D、20 Eの突条2 1が窓硝子3の表面3 aあるいは裏面3 bに圧接するようになっている。

【0024】尚、この実施の形態における硝子案内縁材4は、基材10と接触帯材20 A、20 B、20 C、20 D、20 Eを同時に押し出し成型して製造しており、基材10と各接触帯材20 A～20 Eは強固に一体化されている。したがって、窓硝子3と接触帯材20 A～20 Eとを圧接摺動させても、接触帯材20 A～20 Eが基材10から剥離したり脱落したりすることはない。

【0025】このように構成された硝子案内縁材4では、窓硝子3の全閉操作時に窓硝子3に圧接摺動するのは接触帯材20 A、20 Bの突条2 1の頂部であり、窓硝子3との接触面積が非常に小さく、しかも、接触帯材20 A、20 Bは硝子に対する摩擦が小さい樹脂で形成しているので、これらが相俟って、窓硝子3と接触帯材20 A、20 Bとの間の摩擦抵抗は非常に小さい。したがって、窓硝子3の開閉操作が非常にスムーズになり、軽快、円滑、安定に操作することができる。

【0026】また、突条2 1は硝子案内縁材4の長手方向に沿い長手方向全長に亘って設けられており、接触帯材20 A、20 Bの突条2 1の頂部が窓硝子3の表面3 aあるいは裏面3 bに適度の強さで圧接しているので、窓硝子3との間の気密性及び水密性に優れており、また、雨水等の進入防止効果や水切り効果も高い。特に、この実施の形態では窓硝子3の全閉時には、窓硝子3の上縁3 cにも接触帯材20 Cの突条2 1が圧接するようになっているので、気密性及び液密性が極めて高い。

【0027】また、接触帯材20 A～20 Eは硝子に対する摩擦が小さい樹脂で形成されているので、窓硝子3が圧接摺動しても突条2 1は摩耗しにくく、硝子案内縁材4の所期の性能を長期に亘って維持することができる。

【0028】また、接触帯材20 A、20 Bの表面は滑らかな曲線を有していて光沢もあり、自動車1の外から硝子案内縁材4が見えても見栄えがよい。

【0029】〔第2の実施の形態〕次に、図4を参照して、本発明に係る硝子案内縁材の第2の実施の形態を説明する。第2の実施の形態の硝子案内縁材40は、自動車1のドア2において窓硝子3が突き出てくる部分に設置された態様であり、図4は、図3においてII-II線に沿って破断した硝子案内縁材40の断面図である。

【0030】この硝子案内縁材40は、窓硝子3の表面

3 a側に配置された表縁材4 1と、裏面3 b側に配置された裏縁材4 2の2部品から構成されており、表縁材4 1と裏縁材4 2は窓硝子3を間に挟んで対向して配置され、それぞれ図示しないドアパネルに固定される。

【0031】表縁材4 1はその上下に、窓硝子3側に向かって斜め上方に延びる舌片4 3、4 4が設けられており、舌片4 3、4 4において窓硝子3に圧接する部分には接触帯材(接触部)50 A、50 Bが設けられている。裏縁材4 2はその上下に、窓硝子3側に向かって斜め上方に延びる舌片4 5、4 6が設けられており、舌片4 5、4 6において窓硝子3に圧接する部分には接触帯材(接触部)50 C、50 Dが設けられている。

【0032】接触帯材50 A～50 Dは、前記第1の実施の形態における接触帯材20 A～20 Eと同じ素材で形成されており、接触帯材20 A～20 Eと同様に複数本の突条5 1を有している。

【0033】第2の実施の形態の硝子案内縁材40の場合は、窓硝子3の表面3 aが表縁材4 1の上下の接触帯材50 A、50 Bの突条5 1の頂部に圧接し、窓硝子3の裏面3 bが裏縁材4 2の上下の接触部50 C、50 Dの突条5 1の頂部に圧接しながら、窓硝子3は昇降する。この第2の実施の形態の硝子案内縁材40も第1の実施の形態の硝子案内縁材4と同様の作用・効果を奏する。

【0034】

【発明の効果】以上説明したように、本発明に係る硝子案内縁材によれば、可動硝子を間に挟んで対向して配置され前記可動硝子の移動方向に対して交差する方向に長く延びる少なくとも一対の舌片を有し、前記可動硝子の移動により前記舌片の先部が前記可動硝子の表面あるいは裏面を相対的に圧接摺動する軟質合成樹脂製の硝子案内縁材において、前記各舌片における前記可動硝子が圧接する部分は、他の部分よりも硝子に対する摩擦が小さい軟質合成樹脂で形成された接触部とされており、この接触部には、前記可動硝子側に突出し前記舌片の長手方向に沿い長手方向全長に亘って連続的に延びる突条が複数設けられていることにより、可動硝子を動作させたときの可動硝子と硝子案内縁材との間の摩擦抵抗を小さくでき、可動硝子を非常に軽快に、円滑に、安定に操作することができるという優れた効果が奏される。また、長期使用していても、接触部が摩耗しにくく、したがって、硝子案内縁材の所期の性能を長期に亘って維持することができる。さらに、可動硝子と硝子案内縁材との間の気密性及び水密性が高く、また、雨水等の進入防止効果や水切り効果も高い。

【0035】また、前記接触部とそれ以外の部分を同時に押し出し成型して一体化した場合には、接触部と可動硝子との圧接摺動によっても、接触部が剥離したり脱落したりすることがない。さらに、製造工程が簡略化できるという利点もある。

## 【図面の簡単な説明】

【図1】 本発明の第1の実施の形態における硝子案内縁材を一部破断して示す斜視図である。

【図2】 窓硝子全閉時における前記硝子案内縁材の要部断面図である。

【図3】 本発明に係る硝子案内縁材を備えた自動車の斜視図である。

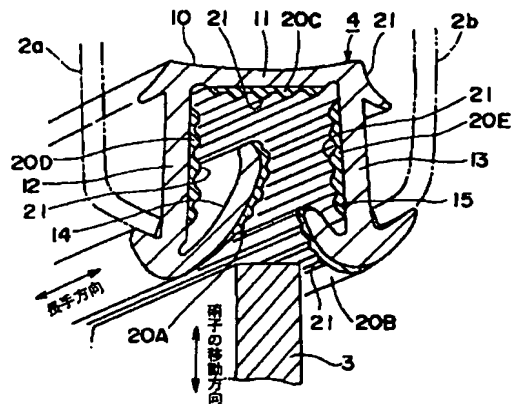
【図4】 本発明の第2の実施の形態における硝子案内縁材の断面図である。

## 【符号の説明】

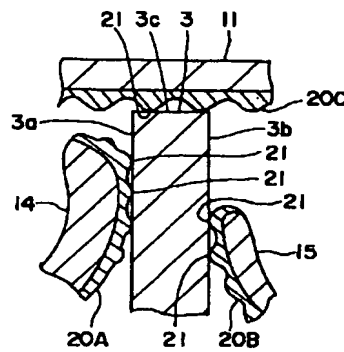
- 1 自動車
- 2 ドア
- 3 窓硝子（可動硝子）
- 4 硝子案内縁材

- \* 10 基材
- 11 頂板部（連結部）
- 12 側板部（連結部）
- 13 側板部（連結部）
- 14 第1舌片
- 15 第2舌片
- 20A～20E 接触帯材（接触部）
- 21 突条
- 40 硝子案内縁材
- 10 41 表縁材
- 42 裏縁材
- 43～46 舌片
- 50A～50D 接触帯材（接触部）
- \* 51 突条

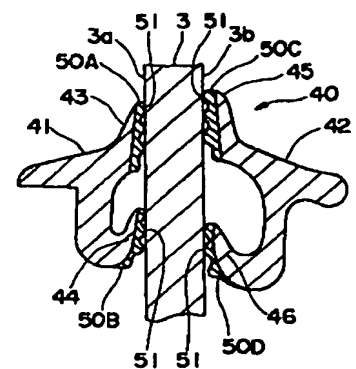
【図1】



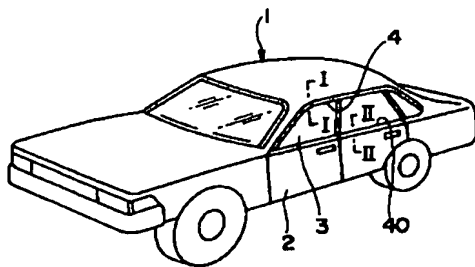
【図2】



【図4】



【図3】



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